

Claims

- ✓ 1. A screen panel for a wood-chip digester, comprising a screen plate having a plurality of slots therein, wherein said slots are curved and have a width in the range of from approximately 3 mm to approximately 10 mm.
- ✓ 2. A screen panel according to claim 1, wherein said slots have a chord length in the range of from approximately 1.5 inches to approximately 3 inches.
- ✓ 3. A screen panel according to claim 1, wherein said slots have a chord length in the range of from approximately 1 inch to approximately 1.25 inches.
- ✓ 4. A screen panel according to claim 1, wherein said slots are curved in the form of an arc.
- ✓ 5. A screen panel according to claim 4, wherein said slots have a radius of curvature in the range of from approximately 1.5 inches to approximately 3 inches.
- ✓ 6. A screen panel according to claim 4, wherein said slots have a radius of curvature in the range of from approximately 0.75 inches to approximately 1.25 inches.
- ✓ 7. A screen panel according to claim 4, wherein each said slot is defined between two sides having equal radii of curvature.
- ✓ 8. A screen panel according to claim 4, wherein all of the slots have their concave sides facing in the same direction, and said panel is arranged to be installed in a digester with that direction being the upstream direction of chip flow.
- ✓ 9. A screen panel according to claim 1, wherein the slots have the said width in the range of from 3 mm to 10 mm in the middle of the thickness of the screen plate, and widen out towards the surface of the screen plate on both sides of the plate.
- ✓ 10. A screen panel according to claim 9, wherein the slots have a generally parallel-sided portion and have a portion that widens out at an angle towards the surface of the screen plate on at least one side of the middle portion.
- ✓ 11. A screen panel according to claim 10, wherein the slots have a generally parallel-sided middle portion and have a portion that widens out at an angle on each side of the middle portion.

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- ✓ 12. A screen panel according to claim 10, wherein the slots have a generally parallel-sided portion on the side that in use faces inwards towards the interior of the digester, and have a portion that widens out at an angle on the side that in use faces outwards.
- ✓ 13. A screen panel according to claim 10, wherein the widening portions have a generally constant half-angle in the range of from approximately 10° to approximately 20° .
- ✓ 14. A screen panel according to claim 10, wherein the generally parallel-sided portion extends for approximately half the thickness of the plate.
- ✓ 15. A screen panel according to claim 1, wherein the slots have the said width in the range of from 3 mm to 10 mm at one side of the screen plate, and the slots widen out continuously at an angle from that side to the other side of the screen plate.
- ✓ 16. A screen panel according to claim 1 for a substantially cylindrical screen, wherein the screen plate is arranged to be angled at approximately 1° to the axis of the cylindrical screen.
- ✓ 17. A screen panel for a wood-chip digester, comprising a screen plate having a plurality of slots therein, wherein said slots have a width in the range of from approximately 3 mm to approximately 10 mm in the middle of the thickness of the screen plate, and widen out towards the surface of the screen plate on both sides of the plate.
- ✓ 18. A screen panel according to claim 17, wherein the slots have a generally parallel-sided middle portion and have a portion that widens at an approximately constant angle on each side of the middle portion.
- ✓ 19. A screen panel according to claim 18, wherein the widening portions widen at a half-angle in the range of from approximately 10° to approximately 20° for approximately one quarter of the thickness of the plate.
- ✓ 20. A screen panel for a wood-chip digester, comprising:
 - a screen plate having a plurality of slots therein;
 - wherein said slots are curved in the form of an arc;
 - wherein each said slot is defined between two sides having equal radii of curvature in the range of from approximately 0.75 inches to approximately 3 inches;

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wherein said slots have a chord length in the range of from approximately 0.75 inches to approximately 3 inches;

wherein said slots have a generally parallel-sided middle portion in the middle of the thickness of the screen plate, which middle portion has a width in the range of from approximately 3 mm to approximately 10 mm;

wherein the slots and have a portion that tapers out at an angle on at least one side of the middle portion, at a half-angle in the range of from approximately 10° to approximately 20°, for approximately one quarter to one half of the thickness of the plate;

wherein all of the slots have their concave sides facing in the same direction; and

wherein said panel is arranged to be installed in a digester with that direction being the upstream direction of chip flow.

✓ 21. A screen panel according to claim 20, wherein said slots have a generally parallel-sided middle portion in the middle of the thickness of the screen plate, which middle portion has a width in the range of from approximately 3 mm to approximately 10 mm; and

wherein said slots and have a portion that tapers out at an angle on at least one side of the middle portion, at a half-angle in the range of from approximately 10° to approximately 20°, for approximately one quarter to one half of the thickness of the plate.

✓ 22. A screen panel for a wood-chip digester, comprising:

a screen plate having a plurality of slots therein;

wherein said slots are curved in the form of an arc;

wherein each said slot is defined between two sides having equal radii of curvature in the range of from approximately 0.75 inches to approximately 3 inches;

wherein said slots have a chord length in the range of from approximately 0.75 inches to approximately 3 inches;

wherein said slots have a width in the range of from approximately 3 mm to approximately 10 mm at one side of said screen plate;

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✓ wherein said slots taper out at an angle from said one side of the screen plate at a half-angle in the range of from approximately 5° to approximately 20° to the other side of the plate;

wherein all of the slots have their concave sides facing in the same direction;
and

wherein said panel is arranged to be installed in a digester with that direction being the upstream direction of chip flow.